

# Supporting California

# Energy Conservation



## OVERVIEW

Farmers and ranchers can cut input costs, improve energy efficiency, protect soil and water resources, reduce the nation's dependence on fossil fuels, and save money by using energy-specific conservation practices available through the USDA Natural Resources Conservation Service (NRCS). NRCS is committed to providing conservation practices that save producers money and improve the energy independence of our nation.

## LEGISLATIVE AUTHORIZATION

The 2014 Farm Bill re-authorized NRCS to offer technical and financial assistance to landowners interested in reducing the energy consumption of animal operations, irrigation, tillage systems and many more agriculture practices. This assistance is being made available through the Environmental Quality Incentives Program (EQIP).

## CONSERVATION PLANNING

An Agricultural Energy Management Plan (AgEMP) is an analysis of current farm infrastructure and management techniques with recommendations on how to reduce energy consumption. This includes purchased fuels, electricity, and renewable energy sources used to perform farm activities.

AgEMP's are applicable to livestock production systems, field crop systems, specialized non-livestock operations (such as grain drying and cold storage operations). The plans provide cost effective ways to decrease operating costs by saving energy.

AgEMP's are specific to an individual operation and can address both the landscape (pastureland, rangeland, cropland or forestland) and headquarters (animal feeding operations, processing and storage facilities, and greenhouses). AgEMP's determine current energy usage over the past annual

cycle and provide cost-effective energy alternatives and recommendations for each farm enterprise. The evaluation of energy conservation activities includes energy used in the cultivation, protection, harvesting, processing and storage of agricultural crops, and in the feeding, housing and processing of farm animals and animal products.

A qualified professional will develop the AgEMP. Farmers and ranchers may choose from an approved list of certified, registered Technical Service Providers (TSPs) who can help producers with technical assistance for specific conservation programs administered by USDA. Names are available from your local NRCS office or from the Technical Service Provider Registry located at <http://techreg.usda.gov/>.

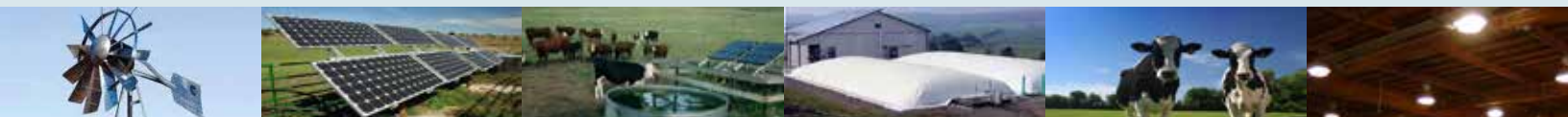
The cost of an AgEMP depends on the complexity of the operation, and NRCS financial assistance pays a percentage of the total cost of the plan. NRCS will pay cooperators when the plan is complete.

## NRCS ENERGY SELF ASSESSMENT TOOLS

NRCS has created online energy self assessment tools relating to energy conservation and renewable energy production. These tools were designed to help farmers and ranchers identify ways to reduce their energy costs.

The energy conservation tools determine if energy efficient equipment is being used and then estimates the current energy usage. The tools also calculate the estimated energy and cost savings for the use of high efficiency equipment and energy conserving practices.

The renewable energy tools help estimate the energy production from solar photovoltaic panels, solar hot water panels, wind turbines, biogas from anaerobic digesters and biomass such as wood, wood pellets, corn and prairie grass pellets.



The energy estimator tools will assist farmers in identifying where they can reduce energy costs related to animal housing, tillage, irrigation, and nitrogen application.

In particular, the Lighting Energy Self Assessment Tool will increase awareness of the energy efficiency of different types of lights used in agriculture. It will also calculate the potential savings from using high efficiency lamps. This energy calculator is designed to estimate current lighting energy usage based on your inputs and suggest more efficient alternatives when appropriate. This tool incorporates all types of lighting commonly used in agricultural enterprises including incandescent, halogen, mercury vapor, compact fluorescent (CFL), T12 fluorescent, metal halide, T8 fluorescent, high pressure sodium and T5 fluorescent lamps. This tool provides generic lamp replacement recommendations based on the current lamp type used and the typical replacement options.

These tools can be found at:

<http://ruralenergy.wisc.edu/conservation/default.aspx>

and

<http://energytools.sc.egov.usda.gov/>

#### **ABOUT ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP)**

EQIP is a voluntary program that provides financial and technical assistance to agricultural producers to address natural resource concerns. The program offers opportunities to improve soil, water, plant, animal, air and energy-related resources on agricultural land and non-industrial private forestland.

EQIP is a competitive program (one out of three applications is funded on average) and projects are generally ranked for environmental benefits.

# Energy Conservation Practices Available

NRCS offers technical and financial assistance on conservation practices for on-farm energy efficiency. Here are available energy-related conservation practices for farms and ranches in California:



#### **ENERGY AUDITS**

Energy evaluation and recommendations using higher efficiency equipment and alternative farming practices.



#### **LIGHTING UPGRADES**

Replacement of less efficient lighting systems, including installation of more efficient lighting ballasts and bulbs.



#### **EQUIPMENT UPGRADES**

Replacement of both landscape and headquarters equipment with more efficient units and advanced controllers.



#### **PUMP REPLACEMENT**

Replacement of an inefficient pump with a higher efficiency pump and/or variable frequency drive.



#### **ANAEROBIC DIGESTERS**

Installation of an on-farm manure digester and associated equipment for the purpose of energy production.

For more information on NRCS Farm Bill conservation programs, visit:

[www.nrcs.usda.gov/wps/portal/nrcs/main/ca/programs/](http://www.nrcs.usda.gov/wps/portal/nrcs/main/ca/programs/)

*Applicants must have a completed Energy Audit (ASABE S612 Type 2) before becoming eligible for other energy-related practices. These practices are intended to reduce on-farm energy consumption or for energy production limited to on-farm use.*